

**AGRICULTURAL ENGINEERING CURRICULUM
AGRICULTURAL POWER AND MACHINERY ENGINEERING OPTION
(2015-2016 CATALOG)**

A total of 128 credits required for graduation

I. Communications (10 credits)

3 cr.	Engl 150 (FSSS)	Critical Thinking and Communication
3 cr.	Engl 250 (FSSS)	Written, Oral, Visual, and Electronic Composition
3 cr.	Comm. Elect.	Select one of the courses below:
	<i>Engl 309 (FS)</i>	<i>Report and Proposal Writing</i>
	<i>Engl 314 (FSSS)</i>	<i>Technical Communication</i>
	<i>Sp Cm 212 (FSSS)</i>	<i>Fundamentals of Public Speaking</i>
	<i>Ag Eds 311 (FS)</i>	<i>Presentation and Sales Strategies for Ag Audiences</i>
	<i>Mkt 343 (FS)</i>	<i>Personal Sales</i>
1 cr.	Lib 160 (FSSS)	Library Instruction

II. Mathematical Sciences (14 credits)

4 cr.	Math 165 (FSSS)	Calculus I
4 cr.	Math 166 (FSSS)	Calculus II
3 cr.	Math 266 (FSSS)	Elementary Differential Equations
3 cr.	Stat 305 (FSSS)	Engineering Statistics

III. Physical Sciences (15 credits)

4 cr.	Chem 167 (FS)	General Chemistry for Engineering Students
1 cr.	Chem 167L (FS)	Laboratory in General Chemistry for Engineering
5 cr.	Phys 221 (FSSS)	Introduction to Classical Physics I
5 cr.	Phys 222 (FSSS)	Introduction to Classical Physics II

IV. Biological and/or Natural Resource Sciences (6 credits)

3 cr.	Agron 154 (FS)	Fundamentals of Soil Science
3 cr.	Biology	Select one of the courses below:
	<i>Biol 251 (S)</i>	<i>Biological Processes in the Environment</i>
	<i>Biol 211(FS)</i>	<i>Principles of Biology I</i>

V. Social Sciences and Humanities (12 credits)

3 cr.	U. S. Diversity Course (Select from University-approved list).	
3 cr.	International Perspectives Course (Select from University-approved list).	
6 cr.	Social Science and Humanities Electives (Select from CALS-approved list).	

VI. Engineering (6 credits)

R cr.	Engr 101 (FS)	Engineering Orientation
3 cr.	A B E 160 (FS)	Engineering Problems with Computer Applications Laboratory
3 cr.	A B E 170 (FS)	Engineering Graphics and Introductory Design

VII. Agricultural Engineering (34 credits)

1 cr.	A B E 110 (S)	Experiencing Agricultural and Biosystems Engineering
1 cr.	A B E 201 (FS)	Entrepreneurship and Internship Seminar
3 cr.	A B E 216 (F)	Fundamentals of Agricultural and Biological Engineering
2 cr.	A B E 218 (S)	Project Management and Design
1 cr.	Computer Graphics	Select one of the courses below:
	<i>A B E 271* (FS)</i>	<i>Engineering Applications of Parametric Solid Modeling</i>
	<i>A B E 272* (FS)</i>	<i>Parametric Solid Models, Drawings, Assemblies using Pro/ENGINEER</i>
3 cr.	A B E 316 (F)	Computer Applications and Systems Modeling
3 cr.	A B E 340 (F)	Functional Analysis and Design of Agricultural Field Machinery
3 cr.	A B E 342 (S)	Agricultural Tractor Power
4 cr.	A B E 363 (F)	Agri-Industrial Applications of Electric Power and Electronics
3 cr.	A B E 404 (F)	Instrumentation for Agricultural and Biological Engineering
2 cr.	A B E 415 (FS)	Agricultural Engineering Design I
2 cr.	A B E 416 (FS)	Agricultural Engineering Design II
3 cr.	A B E 413 (F)	Fluid Power Engineering
3 cr.	ABE Elective	Select one of the courses below:
	<i>A B E 431 (F)</i>	<i>Design and Evaluation of Soil and Water Conservation Systems</i>
	<i>A B E 469 (S)</i>	<i>Grain Processing and Handling</i>
	<i>A B E 472</i>	<i>Design of Environmental Modification Systems for Bio Products</i>
	<i>(S-even sem. only)</i>	<i>Design of Agricultural Structures</i>
	<i>A B E 478</i>	
	<i>(S-odd sem. only)</i>	
	<i>A B E 480 (F)</i>	<i>Engineering Analysis of Biological Systems</i>

VIII. Mechanical Engineering (10 credits)

3 cr.	M E 324 (FSSS)	Manufacturing Engineering
1 cr.	M E 324L (FSSS)	Manufacturing Engineering Lab
3 cr.	M E 325 (FS)	Machine Design
3 cr.	M E 231 (FS)	Thermodynamics

IX. Materials Engineering (3 credits)

3 cr.	Mat E 273 (FSSS)	Principles of Materials Science and Engineering
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X. Engineering Mechanics (13 credits)

3 cr.	E M 274 (FSSS)	Statics of Engineering
3 cr.	E M 324 (FSSS)	Mechanics of Materials
1 cr.	E M 327 (FSSS)	Mechanics of Materials Laboratory
3 cr.	E M 345 (FSSS)	Dynamics
3 cr.	E M 378 (FSSS)	Mechanics of Fluids

XI. Technical Elective (5 credits)

1. Any non-seminar/internship 300, 400 and 500 level A B E/BSE course not required for P&M option.
2. Any non-seminar/internship 300 and 400 level Engineering course not required for P&M option.
3. Any non-seminar/internship 500 level TSM course
4. Any non-seminar/internship 300 and 400 level Econ course
5. Any non-seminar/internship 300 and 400 level Mgmt course
6. Any non-seminar/internship 300 and 400 level Mkt course

Courses listed below are exceptions to the above guidelines.

1 cr.	A B E 271* (FS)- OR-	Engineering Applications of Parametric Solid Modeling
1 cr.	A B E 272* (FS)	Parametric Solid Models, Drawings, and Assemblies (Pro/Engineer)
1 cr.	A B E 273	CAD for Process Facilities and Land Use Planning
1 cr.	A B E 418	Fundamentals of Engineering Review
3 cr.	AGRON 354 (FS)	Soils and Plant Growth
1 cr.	AGRON 354L (FS)	Soils and Plant Growth Laboratory
3 cr.	AGRON 356 (F)	Site-Specific Crop and Soil Management
3 cr.	AGRON 405/505 (S-odd#)	Environmental Biophysics
3 cr.	AGRON 477/577 (S)	Soil Physics
3 cr.	TSM 310 (S)	Total Quality Improvement
3 cr.	TSM 333 (F)	Precision Farming Systems
3 cr.	TSM 340 (F)	Advanced Automated Manufacturing Processes
3 cr.	TSM 370 (S)	Occupational Safety
3 cr.	TSM 440 (F)	Cellular Lean Manufacturing Systems
3 cr.	TSM 465 (S)	Automation Systems

*A B E 271 and A B E 272, one can count towards the computer graphics elective and the other can count towards the technical elective. You cannot double count one course in two areas.

Please check the current catalog and Schedule of Classes for most recent offerings.